

Arduino Cheatsheet

Values

```
int    3, -4
bool   true, false
```

Integer Operations

sum	+	3 + 4 == 7
difference	-	6 - 8 == -2
product	*	2 * 7 == 14
quotient	/	7 / 3 == 2
remainder	%	7 % 3 == 1

Boolean Operations

equality	==	4 == 4
inequality	< >	6 > 4
	<= >=	5 <= 7
not	!	!(5 < 2)
	!=	5 != 3
and	&&	(4 < 5) && (7 > 3)
and/or		(4 > 9) (4 > 2)

Assignment

```
initialisation  int x = 73;
                int y;
updating        x = 37;
```

Abbreviations

x = x + 1	x++ or ++x
x = x - 1	x-- or --x
x = x + y	x += y
x = x - y	x -= y
x = x * y	x *= y
x = x / y	x /= y
x = x % y	x %= y

Comments

```
//          single line comment
/* ... */   multiple lines between the */
```

If Blocks

Optionally run blocks of code depending on various conditions. `if` is required, `else if` and `else` blocks are optional but `else` should come last if you use it.

```
if (age < 13) {
    print("Child");
} else if (age < 18) {
    print("Teenager");
} else if (age < 60) {
    print("Adult");
} else {
    print("Respected Elder");
}
```

For Loops

For loops run a block of code until a counter is invalid. The following prints the numbers 0 to 9:

```
for (int i=0; i<10; i=i+1) {
    print(i);
}
```

The first statement *initialises* the counter before the loop runs. The second gives the condition for the block to be run (when it is `false`, the loop stops). The last says what happens in between *iterations*.

Common Functions

Digital pins can be in one of two modes, `INPUT` if you want to check the voltage such as with a switch, `OUTPUT` if you want to turn the pins on/off such as with an LED. The voltages can be set to `HIGH` (5 V) or `LOW` (0 V).

```
pinMode(pin, mode)
digitalRead(input_pin)
digitalWrite(output_pin, voltage)
delay(time)
```

The delay time is in milliseconds.

Main Functions

```
void setup() {
    // code here runs when the
    // Arduino starts
}

void loop() {
    // this code runs again and
    // again after setup until
    // power is lost
}
```